DOCUMENT RESUME

ED 312 377 CE 053 424

TITLE	Strengthening the Performance of Community Health Workers in Primary Health Care. Report of a WHO Study Group. Technical Report Series 780.
INSTITUTION	World Health Organization, Geneva (Switzerland).
REPORT NO	ISBN-92-4-120780-9
PUB DATE	89
NOTE	53p.
AVAILABLE FROM	WHO Publications Center USA, 49 Sheridan Avenue, Albany, NY 12210 ($4.80).
PUB TYPE	Reports - Research/Technical (143)
EDRS PRICE	MF01/PC03 Plus Postage.
DESCRIPTORS	*Community Health Services; Developing Nations; Foreign Countries; *Health Personnel; *National Programs; *Primary Health Care; Program Improvement; *Training

ABSTRACT

This document describes a study that investigated the reasons for the frequent failure of national health systems based on primary health care to make effective use of community health workers. The report assesses different national experiences in order to pinpoint weaknesses, trace key mistakes, and define corrective actions. The report opens with a brief historical overview of problems that have arisen in the use of community health workers and reasons for these problems. Noting that governments frequently fail to decide what community health workers are expected to achieve, the second section proposes an explicit definition of the place, role, and functions of community health workers within the context of a national health system. The report then identifies and explores eight weaknesses, ranging from policy and organizational errors that have built failure into the system to problems of poor selection, insufficient training, inadequate motivation, and lack of reward. Strategies to overcome each problem are proposed. Specific recommendations drawn from national experiences are also included. The final sections condense the contents into a series of conclusions and recommendations intended to guide the reshaping of national programs. Eight references and a 59-item reading list conclude the document. (KC)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

The World Health Organization is a specialized agency of the United Nations with primary responsibility for international health matters and public health. Through this organization, which was created in 1948, the health professions of some 165 countries exchange their knowledge and experience with the aim of making possible the attainment by all citizens of the world by the year 2000 of a level of health that will permit them to lead a socially and economically productive life.

By means of direct technical cooperation with its Member States, and by stimulating such cooperation among them, WHO promotes the development of comprehensive health services, the prevention and control of diseases, the improvement of environmental conditions, the development of health manpower, the coordination and development of biomedical and health services research, and the planning and implementation of health programmes.

These broad fields of endeavour encompass a wide variety of activities, such as developing systems of primary health care that reach the whole population of Member countries; promoting the health of mothers and children; combating malnutrition; controlling malaria and other communicable diseases including tuberculosis and leprosy; having achieved the eradication of smallpox, promoting mass immunization against a number of other preventable diseases; improving mental health; providing safe water supplies; and training health personnel of all categories.

Progress towards better health throughout the world also demands international cooperation in such matters as establishing international standards for biological substances, pesticides, and pharmaceuticals; formulating environmental health criteria; recommending international nonproprietary names for drugs; administering the International Health Regulations; revising the International Classification of Diseases, Injuries, and Causes of Death; and collecting and disseminating health statistical information.

Further information on many aspects of WHO's work is presented in the Organization's publications.

* *
*

The *WHO Technical Report Series* makes available the findings of various international groups of experts that provide WHO with the latest scientific and technical advice on a broad range of medical and public health subjects. Members of such expert groups serve without remuneration in their personal capacities rather than as representatives of governments or other bodies. An annual subscription to this series, comprising 12 to 15 such reports, costs Sw. fr. 100.–

This report contains the collective views of an international group of experts and does not necessarily represent the decisions or the stated policy of the World Health Organization

Strengthening the performance of community health workers in primary health care

Report of a
WHO Study Group

World Health Organization
Technical Report Series
780

World Health Organization, Geneva 1989

ISBN 92 4 120780 9

© World Health Organization 1989

Publications of the World Health Organization enjoy copyright protection in accordance with the provisions of Protocol 2 of the Universal Copyright Convention. For rights of reproduction or translation of WHO publications, in part or *in toto*, application should be made to the Office of Publications, World Health Organization, Geneva, Switzerland. The World Health Organization welcomes such applications.

The designations employed and the presentation of the material in this publication do not imply the expression of any opinion whatsoever on the part of the Secretariat of the World Health Organization concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries.

The mention of specific companies or of certain manufacturers' products does not imply that they are endorsed or recommended by the World Health Organization in preference to others of a similar nature that are not mentioned. Errors and omissions excepted, the names of proprietary products are distinguished by initial capital letters.

ISSN 0512-3054

PRINTED IN SWITZERLAND

89/7915 — Schüler SA — 9000

CONTENTS

	Page
1. Introduction	5
1.1 Objectives of the Study Group	7
2. The place and role of community health workers in national health systems	8
3. Weaknesses of existing programmes	10
3.1 Minimal policy and organizational commitment	10
3.2 Poorly defined functions	12
3.3 Poor selection	12
3.4 Deficiencies in training and continuing education	13
3.5 Lack of support and supervision	13
3.6 Uncertain working conditions	13
3.7 Undetermined cost and sources of finance	14
3.8 Lack of monitoring and evaluation	14
4. Strategies for action	14
4.1 Organization and structure	14
4.2 Functions	20
4.3 Selection	22
4.4 Training and continuing education	24
4.5 Supervision	27
4.6 Working conditions	29
4.7 Cost and financing	31
4.8 Monitoring and evaluation	34
5. Conclusions	37
6. Recommendations	40
6.1 Recommendations to countries	40
6.2 Recommendations to WHO	41
Acknowledgements	42
References	42
Selected further reading	43

WHO STUDY GROUP ON COMMUNITY HEALTH WORKERS

Geneva, 2–9 December 1987

*Members**

Professor E. Gallegos de Hernandez, Coordinator, Office of Research, Faculty of Nursing, Autonomous University of Nuevo León, Monterrey, Nuevo León, Mexico

Dr A.R. Kabbashi, Adviser and Chairman, National EPI Steering Committee, Ministry of Health, Khartoum, Sudan (*Vice-Chairman*)

Dr E.T. Maganu, Deputy Permanent Secretary, Director of Health Services, Ministry of Health, Gaborone, Botswana (*Rapporteur*)

Dr E. Tulloch, College of Arts, Science and Technology, Kingston, Jamaica (*Chairman*)

Dr P. Vuthipongse, Chief Medical Officer, Office of the Permanent Secretary, Ministry of Public Health, Bangkok, Thailand

Dr Xuegui Kan, Deputy Director, Department of Health and Epidemic Prevention, Ministry of Public Health, Beijing, China

Representatives of other organizations

African Medical and Research Foundation

Ms P. Ochola, Head of Community Based Health Care Support Unit, African Medical and Research Foundation, Nairobi, Kenya

Aga Khan Foundation

Ms K.S. Khan, Senior Instructor, Community Health Sciences, Aga Khan Medical University, Karachi, Pakistan

Christian Medical Commission

Dr E.R. Ram, Director, Christian Medical Commission, World Council of Churches, Geneva, Switzerland

International Labour Organisation

Mr V. Klotz, Salaried Employees and Professional Workers Branch, International Labour Office, Geneva, Switzerland

Mrs C.H. Paoli-Pelvey, Salaried Employees and Professional Workers Branch, International Labour Office, Geneva, Switzerland

League of Red Cross and Red Crescent Societies

Dr Y. Agboton, Adviser in Community Health, Geneva, Switzerland

Secretariat

Dr H.M. Kahssay, Scientist, Division of Strengthening of Health Services, WHO, Geneva, Switzerland (*Co-Secretary*)

Dr A. Mangay Maglacas, Scientist, Division of Health Manpower Development, WHO, Geneva, Switzerland (*Co-Secretary*)

Mrs B. Mboge, Chief Nursing Officer, Ministry of Health, Gambia (*Temporary Adviser*)

Dr G. Walt, Lecturer in Health Policy, London School of Hygiene and Tropical Medicine, London, England (*Temporary Adviser*)

* Unable to attend: Mrs I. Bassong, Secretary of State for Health, Ministry of Public Health, Yaoundé, Cameroon.

STRENGTHENING THE PERFORMANCE OF COMMUNITY HEALTH WORKERS IN PRIMARY HEALTH CARE

Report of a WHO Study Group on Community Health Workers

1. INTRODUCTION

A WHO Study Group on Community Health Workers met in Geneva from 2 to 9 December 1987. Dr E. Tarimo, Director, Division of Strengthening of Health Services, in his opening address on behalf of the Director-General of WHO, gave an overview of developments over the previous ten years. He noted that many countries had established or strengthened programmes for the training and deployment of community health workers (CHWs),[1] particularly since the International Conference on Primary Health Care held in Alma-Ata in 1978 (*1*). While, on the whole, the concept of the CHW had been successful, problems had arisen. One was that CHW programmes in many countries were separated from other health programmes. As a result, CHWs had been assigned or appointed with almost no facilities or organization to support them. Perhaps this was not surprising since health systems had usually developed piecemeal, rather than in carefully structured ways. Faced with a new health problem, societies had set up a new structure to deal with it, as an appendage to the existing organization, which had not itself been changed. In some countries, CHWs had been equated with primary health care; and the response to inquiries as to how primary health care was doing was "we have trained so many CHWs". The basic problem was often that governments had not decided what they wanted of their CHWs, or exactly what they wanted to achieve through them.

[1] The term "community health worker" (CHW) is used throughout this report and in WHO in a generic sense. Many countries and programmes call such workers by different names, including: family welfare educator (Botswana); rural doctor and health aide (China); community health agent (Ethiopia); community health guide (India); community health aide (Jamaica); village health worker (Nigeria); and barangay health worker (Philippines).

Against this background WHO had carried out a number of activities, including interregional studies of the functioning of CHWs, and had organized meetings and workshops to examine ways of overcoming the problems being encountered. Prominent among these had been:

—a workshop on CHWs, held in Jamaica in 1980, which had reviewed the first results of an interregional study (*2*);
—an interregional study and workshop on CHWs, held in Manila in 1983 (*3*);
—an interregional planning meeting on "Strengthening the Performance of Community Health Workers", held in New Delhi in 1985, which had led to the current study project in 13 countries (*4*); and
—an interregional conference on "Community Health Workers: Pillars for Health for All", held in Yaoundé, Cameroon in 1986 (*5*).

WHO had also produced a number of documents and publications on the subject, including the training manual *The primary health worker* (*6*) and a revised edition entitled *The community health worker* (*7*).

The term "community health worker" itself had been an issue in the meetings. The Yaoundé Conference had summarized well the characteristics of CHWs, stating that they should be "members of the communities where they work, should be selected by the communities, should be answerable to the communities for their activities, should be supported by the health system but not necessarily a part of its organization, and have a shorter training than professional workers" (*5*). The linkage of CHWs with the community had been emphasized by Dr Mahler, then Director-General of WHO, at the Conference when he had said, "Community health workers must be of the people they serve. They must live with them, work with them, rejoice with them, suffer with them, grieve with them, and decide with them."

However, the task of this Study Group was different from that of the meetings and workshops mentioned above. As in any difficult programme or struggle there came a time when it was important to step back and review achievements, problems and controversies and decide on future strategies. Ten years after the Alma-Ata Conference of 1978, and almost midway to the year 2000, the date set for achieving the goal of health for all, was a good time to carry out such an appraisal. The Study Group assembled for this purpose was

fortunate in having among its participants individuals with extensive experience in CHW programmes at decision-making and other levels.

Perhaps the first question for consideration by the Study Group was whether the concept of the CHW remained valid and relevant. Some people had expected too much of CHWs, seeing them as a means of solving basic health-care problems which they were not equipped to solve. Others had maintained that CHW programmes should be established only after basic issues in health services had been resolved. Still others had seen CHW programmes as a means of creating pressure for change and, in any case, the only possible alternative to having no care at all in many communities. Many discussions on CHWs had paid little attention to their "bridging role" between communities and organized health services, and many papers dealing with monitoring and evaluation of CHWs did not even refer to this role, although it had long been recognized as the most important function of CHWs.

If, after reviewing these and other controversies, the Study Group concluded that the concept of the CHW was valid, it should then try to reach some agreement on the issues or problem areas that would need to be addressed in the coming decade. The principal task of the Study Group, however, was to provide technical guidance and to outline a strategy for resolving each of these issues or problems. The strategy should reflect the experience of countries in dealing with problems, rather than mere opinion.

1.1 Objectives of the Study Group

1. To review, analyse and compare experiences of countries in the utilization of CHWs in primary health care—including their role in national health systems, their training, and the support needed to enable them to perform more effectively.
2. To identify major issues, gaps and areas of concern in all aspects of the use of CHWs in primary health care.
3. On the basis of (1) and (2), to determine and describe explicitly the role of CHWs and their contribution to health systems based on primary health care.
4. To recommend strategies and action for countries and WHO for enhancing the performance of CHWs in health systems based on primary health care, and to identify the role of health systems research in such efforts.

2. THE PLACE AND ROLE OF COMMUNITY HEALTH WORKERS IN NATIONAL HEALTH SYSTEMS

The Study Group accepted the definition of "community health worker" adopted at the Yaoundé Conference in 1986 (5) and given in section 1 (page 6). The momentum in the mobilization of such workers is increasing as it becomes generally accepted that in most countries their wide deployment is essential for the achievement of health for all.

Many countries have for a long time been using health workers who are trained intensively for a limited range of tasks rather than in a broad professional field. There are two reasons for the current interest in employing such health workers. The first is the past failure of services based on health centres to provide adequate coverage of whole populations for their principal health problems and at a cost they could afford. The second is the realization that simple medical and nursing care and the use of medicaments alone can have little effect on the environmental, social and cultural factors that cause disease and disability—CHW services, which go beyond these functions, are one way of influencing these causes of illness. The mobilization of CHWs is a way of bringing services to the people in places that the official health services cannot reach—services delivered by health workers who are like the people themselves, socially and culturally. CHWs can be trained and helped to work with communities to bring about the kinds of change that strike at the causes of disease and ill-health in a community, and at an acceptable cost.

CHWs are in a position to offer health services to populations otherwise denied access to treatment for life-threatening or other disabling illnesses. They are intended as a response to the massive unmet demand for conventional health services in many countries. At the same time, they should be agents of community participation in health, which is essential for bringing under control the diverse causes of illness.

CHWs can therefore be considered to have two distinct but overlapping roles: the provision of services; and the promotion of health in a community. Alternatively, their functions can be viewed as stretching along a continuum, with the provision of services at one end and the promotion of health at the other. Their curative activities represent the furthest outreach of conventional health services. Promotive activities which are an expression of the broad

concept of primary health care as expressed in the Declaration of Alma-Ata (*1*), may range from advocating simple preventive measures to fostering wider community development of direct relevance to health, in such areas as literacy, housing and water supply. The development function is facilitated by widespread community involvement and mobilization. In any country, the CHW's position on the continuum will vary with the country's level of socioeconomic development and the penetration of the health services. The curative role may be less where there is ready access to the formal health sector; the promotive role applies at all levels of development. This then is the potential place of the CHW—it is a formidable job description.

What is the evidence that CHWs are effective? They have achieved much in many countries at different times, but the shortcomings of CHW programmes are often imputed to the CHWs themselves. However, this debate is a sterile one: there is no longer any question of whether CHWs can be key agents in improving health; the question is how their potential may be realized. They have shown that they can effect major changes in mortality and other indices of health status, and that in certain communities they can satisfy prominent health care needs which cannot realistically be met by other means. The issue since the Alma-Ata Conference has been the attempt to develop a common, even global, concept of a CHW which whole countries rather than only a few chosen communities could apply.

It is important to differentiate between national CHW programmes and relatively small, nongovernmental programmes. In small projects, supported by various donor agencies, CHWs have achieved a great deal. The experience with national programmes has been different, however—with a few notable exceptions, it is evident that CHWs are not achieving their potential. There are technical explanations for this failure. Mostly, however, it is due to social, cultural and management factors which are inextricably linked with the CHW's position between the health sector and the community. Failure to face up to these issues leads inevitably to programme ineffectiveness and wasted resources.

Of course, national systems differ considerably. Even within countries, there may be much variation, some areas being better provided with health services that others. CHWs can have different functions and tasks, and some have much more training than others. They differ also with regard to pay and working conditions. In

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

☑ This document has been reproduced as received from the person or organization originating it.

☐ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

C Rock

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

BEST COPY AVAILABLE

addition, programmes change with time, and with developments and changes in countries; for example, major adjustments were made to the Chinese "barefoot doctor" system in the early 1980s.[1] The task of large national systems is to reproduce the success of many of the smaller CHW schemes that preceded them.

3. WEAKNESSES OF EXISTING PROGRAMMES

The Study Group agreed that CHW programmes are in crisis in many countries. Criticism and discontent are growing. For example, a recent countrywide evaluation of the Tanzanian programme commended the commitment of the Ministry of Health, but pointed to great difficulties in implementation. Many WHO reviews have revealed *inter alia* weaknesses in the selection, training and supervision of CHWs (*2,3,8*). Training of CHWs has been suspended in Colombia and Jamaica; Botswana is training fewer than originally envisaged. Economic problems have seriously affected the provision of health services but cannot account fully for the decline in support for CHW programmes, though these programmes are often the first to suffer cuts. The Study Group singled out and discussed eight areas of weakness, which are outlined below. Section 4 proposes strategies for dealing with these weaknesses.

3.1 Minimal policy and organizational commitment

In the enthusiasm for primary health care after 1978, CHW policies were devised hastily, and this led to a number of serious weaknesses in implementation.

(*a*) *CHW programmes tended to be "vertical" programmes.* The shift towards primary health care, which was given added impetus by the Alma-Ata Conference in 1978, the energy with which it was promoted, and the moral force of the arguments for it obliged countries to demonstrate their active commitment to it. Many governments saw CHW programmes as the cheapest, easiest and most obvious way to do so. Plans were made enthusiastically but

[1] In 1984, the Ministry of Public Health in China declared that the title "barefoot doctor" would no longer be used. Existing barefoot doctors who passed an examination became "rural doctors" and those who failed were renamed "health aides". The latter correspond in many ways to CHWs as described in the present report.

hastily, involved only a few policy-makers at top levels, and were largely imposed on health workers. Those who were later to become the trainers and supervisors of CHWs were not involved at all in the planning process. Great emphasis was put on training—what to teach—but little thought was given to follow-up supervision and integration into existing health systems.

(*b*) *CHW programmes were implemented with little professional interest.* The initiative to train CHWs came largely from a few health professionals who persuaded policy-makers in ministries of health that such a category of worker could be useful. The involvement of nurses and other health professionals in planning CHW schemes was minimal, and hence health workers tended to use CHWs as aides in health centres, clinics or hospitals rather than in the community. This has had negative effects especially in countries where such personnel have been seeking to become more professional and improve their positions. These moves favour hierarchical working relations and increase job-differentiation and status-consciousness—all of which run counter to the concepts of CHW programmes.

(*c*) *Structural, political and economic factors were neglected.* CHWs are themselves members of highly stratified communities, within which they may face a great deal of conflict. Class, caste and other divisions affect their own positions and loyalties, and the demands made on them. They are also members of a larger society, which may itself be authoritarian or democratic, but is always divided in its power relations. The political climate in which CHWs work, in society at large and in their own communities, greatly affects their own work and what they can do. Policy-makers have sometimes been naïve about inequalities within their own societies, and the conflicts inherent in reallocating resources to support CHW programmes.

(*d*) *Lessons have not been learned from other sectors.* The dearth of experience in drawing comparisons between CHW programmes and, for example, agriculture and community development is notable. Yet, many lessons from these sectors may be relevant to the health sector. For example, in community development, which extends back to the 1950s and 1960s, much has been learned about ways of working with communities. Pilot projects, often very

successful in small areas, have tended not to be extended successfully to larger areas or into national programmes, owing to the consequent dilution of resources, or to difficulty in assuring supplies. Likewise, lessons could have been learned from the experience of agricultural extension workers, for example with the use of the "training and visits" system (in which training periods are interspersed with field work). Although the effectiveness of the system is still much debated, it may give useful pointers for improving the work of CHWs.

3.2 Poorly defined functions

Some CHW programmes train workers to deal largely with one type of health concern, for example, nutrition, family planning or malaria control. More commonly, CHWs have broader responsibilities—often, they are given numerous tasks, many more than they have been trained for. Sometimes they perform only health promotion tasks, which can be disappointing to communities that lack basic treatment services; or they may get drawn exclusively into curative care, at the expense of health development.

3.3 Poor selection

In principle, communities should select their own health workers, but this is often not done. Their selection is generally left to health professionals or to community leaders who are not sufficiently informed or motivated. Quite often recruits are proposed for the advantage of particular leaders rather than in the interests of the community at large. This may reflect a community's power structure, and have the effect of reducing rather than improving the access of the less privileged to health care. A recruitment process designed to protect the interests of people with little power and guard against biased selection practices may be politically unwelcome in some places. A regrettable practice in many countries is that of recruiting young men and women who may see the position as a means of social advance. This may benefit the more educated and their families, but their aspiration to better-paid employment inevitably builds failure into the system.

3.4 Deficiencies in training and continuing education

CHW training programmes face similar difficulties to those for other district health workers, including: poorly trained teachers, lack of suitable teaching materials, largely irrelevant curricula, courses that are too long or too short, unsuitable training locations, and badly chosen or wrongly used methods of training. Those appointed as trainers of CHWs are frequently selected because they are available rather than for their suitability as trainers. Besides lacking training skills, they are often unfamiliar with the conditions in which trainees will have to work.

Continuing education is essential to an effective CHW programme, but it is too often regarded as something that happens during supervision, or that occurs informally when CHWs visit a health centre. Like good supervision it costs money. However, few programmes make specific provision for the necessary funds and other resources.

3.5 Lack of support and supervision

Many CHW programmes suffer from weak support and supervision. Most supervisors are health-centre staff and they are often not interested in supervision or adequately trained for it. Transport for supervisors, to enable them to visit CHWs in their villages or communities, is usually difficult. CHWs often feel that they have too many supervisors and yet at the same time are given too little support for community work.

3.6 Uncertain working conditions

Pay is a crucial issue but one that in most countries is still unresolved. It is vital for motivation, but the cost involved is considerable. CHWs are sometimes paid by the state and sometimes by the community they serve. Volunteers are rarely a good long-term solution. They tend to drop out at higher rates than paid CHWs, which makes it difficult to sustain a volunteer service. Many volunteers hope for employment and for a career in health care. These aspirations may cause tension, but bureaucratic attempts to reduce such tension, for example by means of state employment, often have disadvantages. This issue must be faced explicitly in the design of CHW programmes.

3.7 Undetermined cost and sources of finance

The financial implications of properly supported national CHW programmes have not been determined; nevertheless the costs of such programmes require serious consideration. Some programmes are funded entirely by government, some entirely by communities; in most countries the costs are shared in varying degrees by government, communities, voluntary organizations and external sources. However, it has proved difficult to sustain CHW programmes, especially in times of economic difficulties when *ad hoc* resources allocated to such programmes may be the first to be reduced.

3.8 Lack of monitoring and evaluation

Deficiencies in monitoring and evaluation are common. The frequent lack of well-defined objectives makes credible monitoring and evaluation impossible and attempts to involve communities have been very few and generally half-hearted.

4. STRATEGIES FOR ACTION

4.1 Organization and structure

For the design and execution of effective CHW programmes, a number of technical questions must be resolved concerning ways of tackling health problems. However, this is a minor problem compared with that of organization at the district level. The critical obstacles are to be found in this area, and it is here that even the most committed programmes may founder.

4.1.1 *National perspectives*

A key issue here is political will. CHW programmes are most likely to succeed where they are an expression of a deliberate political choice to promote the living standards of the worse-off sections of the population. Improvements in health are related to the wider social, cultural and physical environment. A national commitment to an equitable distribution of resources may lead to a variety of improvements, including the deployment of well-supported CHWs.

4.1.2 *The district health system*

There is increasing agreement that a key approach to improving CHW programmes, and indeed primary health care as a whole, is the strengthening of district health systems based on primary health care. The 1986 Yaoundé Conference held this to be self-evident (*5*).

The district health system is a logical part of the organization of national health systems based on primary health care but is more or less a self-contained segment of such a system. It comprises first and foremost a well-defined population, living within a clearly delineated administrative and geographical area, urban or rural, and includes all institutions and individuals providing health care in the district, whether governmental, social security, nongovernmental, private or traditional. A district health system therefore consists of a large variety of interrelated elements that contribute to health in homes, schools, workplaces and communities, through the health sector and other related sectors. It includes self-care, all health workers and facilities up to and including the hospital at the first referral level, and the corresponding laboratory, other diagnostic, and logistic support services. Its component elements need to be well coordinated by an assigned officer and drawn together into a comprehensive range of promotive, preventive, curative and rehabilitative health activities.

Obviously, the organization of district health systems will depend on the circumstances and conditions of each country and district, including the structure and personalities involved. A common feature is some form of district government or arrangement for managing local affairs, which *inter alia* determines how people obtain health care and how community needs receive attention.

The district health system is the framework for the support which the CHW must have in order to function effectively and without which the CHW scheme may fail. This support combines a supportive style of supervision with systematic training of practising CHWs, a reliable referral system, technical support, a supply system and an information system.

4.1.3 *The community*

(*a*) *Community involvement.* The word "community" can mean simply a number of people living in the same area, but it also carries the implications of common interests and fellowship. In practice, social groupings cooperate selectively and in particular contexts. The

political process which leads to particular projects gaining support and others "wilting" through inaction is complex and often unpredictable. The potential of a national CHW programme to function effectively in each locality is therefore uncertain.

The Study Group acknowledged that community involvement is not easily achieved, but it is essential to primary health care. It is not likely to be attained if strict time frames are imposed upon its achievement. A prerequisite for successful community involvement is an understanding of community structures and dynamics, and faith in the community's ability to learn and to manage. The Study Group also took note of the need to equip CHWs with the skills to sensitize, mobilize and organize communities for the promotion of their own health. The failure of many community health programmes can be traced to neglect by planners of the potential of communities to support and sustain their health programmes through their own active participation.

CHWs are by definition part of both the formal health service and the social setting of the health system; from this emanate both their strengths and their weaknesses—strengths because they belong to the health service as well as to the community, and weaknesses because one or other may claim most or all of their interests and loyalties. The very title *community health worker* could be seen as a terminological attempt to gloss over the tension inherent in this position. Progress can be achieved only by acknowledging this tension and by controlling and exploiting it appropriately and fully.

It must be assumed that a CHW is serving not a solitary social group of unified purpose, but a population whose commitment to a particular activity will vary according to its members' expectations of benefit and the social and political context of the activity. The community is not a homogeneous group—its members can have strong conflicts of interest. In this report, the word community is therefore used in the geographical sense of the population potentially served by a CHW; there is no assumption that such social groupings cooperate harmoniously in everyday affairs. It follows that it is important that the community represented by the CHW be defined in such a way that the interests of vulnerable groups, e.g., the poor, are not jeopardized.

These issues must be acknowledged as inescapable facets of any CHW programme—a good programme is an expression of community involvement (*5*). Conversely, community involvement is an essential component of any effective programme of health

improvement. In planning, the key to bringing about constructive community involvement is the creation and support of a variety of links between the community and the health services.

(*b*) *Relations between formal health care and traditional medicine.* The relevance of a working partnership between the formal health-care system and traditional practices varies with the particular national or local circumstances. Such a partnership is more common where strong advocacy of the place of traditional medicine is found at the national political level, as in China and India. Elsewhere traditional medicine is seemingly not strongly represented in CHW programmes. The integration of modern and traditional medical systems is often talked of loosely as a guiding principle of CHW programmes, but it is important to examine what this means in practice.

Modern medicine can indeed be seen as a system. It is made available to people through an identifiable organizational structure which people can see and in most respects is outside their own social network. Indigenous medicine is in general quite different. People have various choices, including the services of specialist healers, but where other major traditions, such as Ayurvedic medicine, are not prominent there is in general no overall organizational scheme. Healers may or may not be suitable candidates for CHW training. However, where individuals respected for their abilities in healing are able and willing to take on this additional role there are clear advantages to training them.

While formal integration between the health-care sector and traditional practitioners may be difficult to accomplish in some areas, it is important to remember that the user may view them as complementary and may not see any conflict between them. It is normal in most countries for people to use the various options open to them. What this implies for CHW programmes is that they must attempt to relate constructively to the other prevailing healing systems.

(*c*) *Intersectoral cooperation.* Fundamental improvements in health can only come about through broad-based changes, that is through changes that are brought about by the activities of a number of sectors. In practice the integration of health services with other sectors is usually poor. Intersectoral cooperation has been a feature of numerous pilot projects but it seems to break down when it is

attempted at a more general level. The fault cannot be the community's, for its dynamics are the same in a pilot project as in a national programme. Rather, it seems to be the fault of the administrative structures of the government departments and agencies concerned.

Failure of intersectoral cooperation at the peripheral level cannot be attributed to inadequacies on the part of the CHWs. If it is missing at the centre and the district, and CHWs and other community workers are not supported, intersectoral cooperation will not take root and grow. The problem at the periphery generally reflects the conventional divisions of responsibility between government departments, and professional aspirations and rivalries at the central and district levels. One solution is to broaden the organization of health care at the centre. In India, for example, a new ministry has been formed, the Ministry for Human Resource Development, which combines the sectors of health, education, sports, youth and culture, to institutionalize intersectoral cooperation at the highest level (*5*).

4.1.4 *The strengthening of district primary health care*

The impact of CHW programmes is determined largely by the nature of the links between the health sector and the community. Exceptionally, communities may themselves initiate and maintain long-term activities through local enthusiasm and organization. This is the ideal of primary health care in action. However, national programmes cannot depend upon chance. There has to be an organized, well-managed relationship between the peripheral services and the health-care system. It must provide three elements: joint guidance of the work of the CHW programme; referral arrangements; and a supply system.

(*a*) *Support groups.* In many places CHW services fail for apparently trivial and avoidable reasons. However, the failure is often built into the system and can be attributed to: (1) the nature of relations between the central authority and health services at the implementation level; and (2) the nature of relations within health service areas. These relationships need to be formalized in order to coordinate the various services and programmes in each CHW area and counteract their tendencies to operate separately, to make

CHWs more accountable to the people they serve, and to keep the centre better informed about what goes on at the periphery.

A CHW programme, therefore, must have the support of a group composed of members of the community which has active links with the health sector (*3*). This is essential for resolving equitably such issues as recruitment, pay, accountability and the scope of the programme. If there is no existing arrangement for managing community affairs that could incorporate a CHW programme and provide a support group, a new group will need to be formed, with the recognition and support of both the community and the government. This kind of firm linkage between the health sector and the community is needed to "sensitize" the community to the programme before health workers can be selected and the programme gets under way (*3*). It is the beginning of a long-term commitment by the health sector and its staff to the support group.

Countries differ in the extent to which such support groups concern themselves solely with health matters or are responsible for a range of community development activities. A WHO interregional study drew attention to the need for training members of support groups (*3*). Clearly, they should have a realistic understanding of the place of different strategies for health improvement, as well as the administrative and accounting skills for managing their CHWs. Training and other types of support for support groups are an important contribution to the supervision of CHWs (*5*).

(*b*) *Referral arrangements.* One reason for employing CHWs concerns the economics of curative medicine. It is uneconomical to employ expensive health professionals for health-care tasks that CHWs can be trained to perform. CHWs can deal with pregnancy, normal labour and delivery; they can also treat many dangerous illnesses. They can thus contribute greatly to the welfare of populations who, without them, would have no ready access to health services. However, their clinical skills are limited and the contribution they can make to ensuring an equitable and complete service depends very much on the support of an adequate referral system.

Commonly, referral systems function poorly or not at all, for a number of reasons. Remoteness is often an important barrier; in remote areas, CHWs need to be trained and equipped to manage a wider range of conditions and more complex problems than they would be expected to manage in communities with easier access to

health services. Other reasons for underuse of referral systems by CHWs or referred patients can be cost, social distance (due to class, cultural or status differences), a poor opinion of the health centre to which referrals are made and domestic or other commitments.

Facility in using a referral system and the support of the system can greatly expand and underpin the CHW's range of health-care skills. Good communication between the community, through its CHW support group, and the health centre, through the CHW's supervisors, helps ensure that the best use is made of referral systems. Referrals can also be opportunities for CHWs to learn—discussion about referred patients, and reports to the CHW from the health centre or hospital, including discharge reports, are important means of continuing education. Referral can also be in the opposite direction. The health centre or hospital may refer patients to CHWs for purposes of ensuring medication and follow-up.

(*c*) *The supply system.* Difficulties in assuring regular supplies of essential drugs and general supplies to CHWs are widely reported. General shortages in the health system are likely to be felt first at the periphery, as health centres become reluctant to redistribute scarce items. A CHW with no medicines presents a less pressing problem to managers at the centre than a hospital or health-centre pharmacy that is short of essential drugs.

General shortages may have various causes, such as lack of foreign exchange or shortcomings in procurement, storage and distribution arrangements. One approach to avoiding shortages is to apply strict criteria in ordering supplies. These criteria include simplicity, availability, a cost that the community can afford, safety, effectiveness and acceptability to the community (*7*).

The management and logistics of supply systems for CHWs may overstretch the economic and managerial capacity of central planning organizations, which can barely cope with existing demands. Nevertheless, before CHWs undertake dispensing, the central administration will need to ensure that the necessary supply and support system for the periphery is in place and functioning.

4.2 Functions

The Study Group noted that most countries had defined the functions of CHWs on the basis of the elements of primary health care contained in the Declaration of Alma-Ata (*1*):

education concerning prevailing health problems and the methods of preventing and controlling them; promotion of food supply and proper nutrition; an adequate supply of safe water and basic sanitation; maternal and child health care, including family planning; immunization against the major infectious diseases; prevention and control of locally endemic diseases; appropriate treatment of common diseases and injuries; and provision of essential drugs.

This very broad range of tasks, essential to improving the health of communities, is made the responsibility of the CHW, whose job description therefore tends to comprise almost all components of a comprehensive primary health care programme. The Study Group considered it unreasonable and unrealistic to assign this range of functions routinely to CHWs. It is also unrealistic to recommend or try to impose a standard set of functions as described in most publications on the subject. Rather, governments should define the functions of CHWs according to what is practical in local circumstances. The report of the Yaoundé Conference (*5*) and *The community health worker* (*7*) list certain factors or criteria that should guide the allocation of functions to CHWs, for example:

—the felt needs of the community,
—the competence of the workers,
—the resources available,
—the geography and population density,
—the availability of other development workers,
—national policy,
—the CHW's personal characteristics, such as age, sex and education,
—the level of support available, and
—the availability of basic health services.

Certain principles apply universally, however. First, functions should not be rigidly established at national level and arbitrarily imposed throughout a country. Regional and local levels of the system should be free to adapt national standards to local circumstances and needs. Second, communities should have a say in determining the functions of their health workers. However, they must first understand the programme, and one of the educational tasks of the programme is to help them acquire this understanding. The community's involvement in defining CHW functions considerably increases the acceptability of a CHW programme and its likelihood of success.

CHWs should not be regarded as generalists who know everything or can do everything from providing first aid to promoting community development. Instead, their role could be that of a focal point for various health-sector and other resources and services, with responsibility for ensuring the community's access to them. The concept of a multipurpose CHW must not be equated with that of an all-purpose worker. It will often be more realistic to allocate different primary health care functions to different individuals, and for a CHW to be a member of a community health team. Such a team would also include, as a rule, other members of the community. The definition of the functions of CHWs should leave room for individual creativity and sufficient flexibility to allow the CHW and community groups to take action beyond prescribed tasks to meet new and unforeseen situations.

The controversy over whether CHWs should perform mainly curative or mainly preventive health tasks reflects an artificial polarization. Both sets of tasks are necessary. Often, the CHW is the only source of treatment available, and the fact that he or she can treat certain conditions on the spot may impress the community and make it more likely to accept and cooperate in the CHW's preventive and health promotive services. Participants at the Yaoundé Conference (*5*) agreed that the CHW should have *service functions* (curative, preventive, promotive) as well as *development functions* (helping to mobilize communities for health development). The Study Group endorsed this broad categorization, which may also be seen as a continuum of functions, from those that are purely curative to those that are purely developmental. Usually, service functions (with curative or preventive emphasis as the case may be) predominate at first. However, the balance between the two types of functions should be kept under continuous review so that the CHW can best meet the community's needs. The mix between service functions and development functions depends on the country's circumstances, but it cannot be left to chance. Health service personnel, especially those responsible for providing support to CHWs, should be fully knowledgeable about the mix of functions that CHWs will be required to perform.

4.3 Selection

Several attempts to set up selection criteria for CHWs have been described in the literature. The Study Group did not approve of this

practice; instead it was recognized that selection criteria would need to vary from country to country and that they should be influenced by cultural, religious and economic factors. The Group strongly recommended that governments establish their own clearly defined selection guidelines. First, they must decide what kind of CHW programme best suits the country's needs and resources, and define the prospective functions of the CHWs. If the programme is to rely mainly on briefly trained, part-time volunteers, the selection guidelines might emphasize qualities such as acceptability to the community and motivation more than educational attainment. However, if CHWs are to perform a wide range of services and to receive correspondingly longer training, selection guidelines will need to refer also to learning ability.

Since CHWs are expected to influence the attitudes and practices of communities sufficiently and in such ways as to improve the state of health of the population, key attributes might be social standing, a long-term commitment to the community served, and an ability to influence by word and example key sections of the community, particularly mothers.

As a working principle for selection, the Study Group proposed that formal selection criteria should not override community choice and local circumstances. Since acceptability to the community is a key factor, the community must be fully involved in the selection process, but health-service personnel must adequately prepare the community to make the selection. Functions, roles and expectations must be fully discussed and agreed upon. This will ensure that the community understands the selection criteria and, together with the health professionals, can use them in choosing the most suitable candidate.

To the usual selection criteria related to age, education, sex, marital status, residence and occupation, the Study Group decided to add motivation for community service. Such motivation is hard to measure and might be considered commonplace and therefore be taken for granted. However, a perusal of personal history, previous community involvement, and other background factors can help in ascertaining motivation level. Motivation cannot make up for lack of skill, but without it a CHW cannot be successful or be accepted by the community.

Despite the vast social and cultural diversity of the areas where CHW programmes are being implemented, some patterns can be discerned as to the relative merits of different categories of recruit.

For instance, in several countries, the younger and more highly educated recruits have been found to be less committed and effective as CHWs (*5*).

The exclusion of women in certain countries from being designated CHWs is largely part of their general exclusion from public office. However, the recruitment procedure is also a factor. In such countries the recruitment of women (where this would be advantageous) will require greater involvement of health personnel in the recruitment process. This is another reason why effective links are needed between the community and the formal health sector.

4.4 Training and continuing education

4.4.1 *Aims*

The aim of CHW training programmes is to equip trainees for the tasks they are expected to perform in the communities to which they are to be assigned. However, the health needs of communities and their aims and objectives with regard to health care are not always considered in the planning and design of training.

When CHWs are viewed as front-line health workers the training tends to focus on certain basic practical skills. For example, CHWs may be trained to monitor the growth of children under five years old and to motivate mothers of undernourished children to visit the nurse or doctor at the health centre. However, such training does not "educate" the CHWs in issues of nutrition and child development and in strategies for tackling problems at the community level. If CHWs are to be agents of change, their training will need to go beyond the mastering of certain practical skills and related knowledge, to communication and organizational skills for motivating the community (or other target group) to undertake collective action to tackle its own health problems.

4.4.2 *Content*

The content of a training programme will depend upon the objectives, which are determined by the activities envisaged for the CHW. Those who determine the learning objectives should know the community needs and keep those needs under review as courses continue. They should be people who are well suited to decide on the skills required by CHWs, and should be free to consult with

representatives of the community and with experienced CHWs and former trainees who have recently taken up community health work. Curricular design and management, and the preparation of learning/teaching materials, depend on the immediate needs of a health service and the felt needs of the community, as well as on long-term development goals that would promote and sustain a satisfactory level of community health.

4.4.3 *Methods of training*

The methods by which trainees learn should be adapted to the learning objectives. As a general principle, training for all skills, whether simple or complex, requires that trainees practise them under supervision until they have reached a level of competence that is acceptable according to agreed standards. The teacher or teaching institution must provide the conditions which will permit the trainees to practise the skills. These conditions should correspond closely to, or be, the actual conditions in which trainees will later be expected to work.

The problem-solving approach, when skilfully used, is most productive since it requires groups of trainees or individuals to practise, under supervision, the solution or management of the same types of problem that they will later meet in their work. Theory and practice are thus combined in realistic conditions. Learning by problem-solving makes special demands on trainers and supervisors, who will need training in the method. Actual events, such as the death of a child, may be taken as starting points for investigating causes and learning the skills of educating families and communities —in the prevention and treatment of diarrhoea, for example.

Depending on the learning objectives, the resources and materials, and teaching skills available, a variety of instructional modes may be used, such as role-playing, simulation, demonstrations and group discussions, in the context of problem-solving in realistic practice conditions. This is an adult-education approach, in which the trainees are treated as active learners and not as mere passive recipients of information and ideas.

4.4.4 *Location and duration of training*

Training should take place as much as possible in circumstances comparable to those in which CHWs are expected to work, and

ideally, in or near their own communities. National and regional training institutions should be avoided as far as possible, as they are usually not designed for training CHWs. It is therefore necessary to strengthen training capabilities at the district level.

The duration of training programmes will be determined by the aims and objectives of the training and the envisaged role of the CHWs. While care must be taken not to overload CHWs at first, the duration of courses should be such as to permit them to be adequately trained to fulfil the community's expectations.

4.4.5 *Trainers*

The orientation and skills of trainers are critical factors in any training programme, although trainers are often appointed because of their availability rather than their suitability. Curative skill is an important part of a CHW's competence and often most in demand when the CHW starts work. Therefore it is the competence that many recruits are most concerned to secure. However, if training is left to trainers who themselves favour curative and technical skills at the expense of other required skills and community and preventive aspects of health care, there is a risk that CHWs will not learn to take seriously their wider role in primary health care, particularly if the training is conducted in a clinical environment.

Various members of the district health team, experienced CHWs, and people with experience in communications and in mobilizing communities for various activities should contribute to training. A number of countries have found that experienced and effective CHWs are the best trainers. Supervised field experience should be the central component of training, and ideally one of the trainers will be the CHW's subsequent supervisor. Trainers and experienced workers from sectors other than the health sector should also be given a prominent part in training to help prospective CHWs acquire basic intersectoral skills.

Trainers should be trained in educational planning and curriculum management. They also need to be familiar with the structure and dynamics of the communities for which the CHWs are being trained, and which have selected them. Trainers sensitive to the sociocultural and economic determinants of health could make the training more meaningful by addressing issues relevant to the local circumstances.

4.4.6 *Continuing education*

Continuing education should be an important feature of successful CHW programmes and to be effective, specific financial provisions must be made for it. Where continuing education is regarded as part of supervision, or assumed to occur informally during visits to health centres, it is unlikely to be sufficient to make any significant difference to the quality of care being provided by the CHWs. The evidence is that continuing education is not receiving the attention it deserves. The skills and knowledge of practising CHWs need to be regularly maintained at a good level and updated. This activity should be linked to supervision to ensure that CHWs are competent in their daily work and meet their communities' developmental needs.

4.5 Supervision

The extent to which poor supervision is referred to as a main cause of failure of CHW programmes indicates the fundamental role of supervision and the commonality of problems in that area. Small-scale projects are often successful because they offer supportive and regular supervision by professionals, and because they sometimes involve communities in overseeing the role of the CHW. Such close supervision in national programmes is rare, however, and support for the CHW as a member of the primary health care team is often lacking. There are numerous reasons for this.

First, CHWs have often been imposed upon health systems, without much planning as to who should form their first line of support and supervision. In national programmes, supervisors are often health-centre staff. It has been the experience in many countries that staff with clinical duties in health centres are likely to give low priority to the supervision of CHWs; clinical demands tend to take precedence. CHWs working in health facilities are often supervised by health professionals who have themselves been trained in very hierarchical systems, and whose main emphasis is on clinical tasks. In busy health facilities there may be little time for supervision, and when it does occur it is heavily oriented towards clinical or clerical activities. CHWs who do not work in health facilities are more difficult to support. In some countries arrangements are made for CHWs to visit the nearest health facility regularly, sometimes to renew their drug supply, or to be paid. It seems that at such visits opportunities for continuing education, discussion of problems and

exchange of information are often missed. Yet CHWs usually value the chance to visit health facilities, and they appreciate educational sessions. In voluntary programmes such regular visits have powerful incentive effects, encouraging CHWs to acquire new knowledge and increase personal contacts. The supervision of CHWs who live in remote places and who cannot easily get to health facilities is often neglected because of lack of transport. Supervisors who do not enjoy their supervisory role may not be particularly concerned when such difficulties arise, and the visits they do make may actually undermine CHWs or become empty rituals.

Second, supervision is too often seen as a method of control or of inspection, rather than as a supportive and educational function performed by one member of the primary health care team for another.

Third, who the supervisor is matters greatly. Often curative rather than health promotion activities are likely to be stressed. Sometimes CHWs do not know who is supposed to supervise them, or they may have several supervisors. Where staff do not work as a team, the CHW can be confused by contradictions and inconsistencies. Where experienced CHWs are themselves appointed as supervisors, they need adequate support. Without such support previously effective CHWs commonly slip into hollow bureaucratic roles.

Other barriers to satisfactory supervision include the social distance between health-centre staff and the communities they serve, and the reluctance of the staff to spend time with communities, let alone help communities undertake responsibility for health matters. In addition, many programmes have no provision for the time or the funds needed for supervision—this function is often expected to be tacked on, unsupported by any resources, to an already full programme.

Although it is widely considered that supervision of CHWs should be a joint responsibility of the community and the professional health staff, this is rarely a feature of national programmes. To whom CHWs are accountable depends greatly on who pays them, and this differs from place to place. Mostly, however, supervision is seen as a responsibility of health staff. Support and supervision would be greatly strengthened by designating clearly who the supervisors are, and by providing the necessary time and financial resources.

There must also be clear strategies for supervision. These need to be learned during training (e.g., in workshops on supervision at

district level), so that both professionals and community members know what is expected of them as supervisors. Guidelines for performing tasks of supervision need to include a check-list of the supervisory activities, the stocks to be checked, and so on, as well as ways of ensuring that difficulties in case management and referrals are brought to light and discussed.

4.6 Working conditions

4.6.1 *Remuneration*

The Study Group strongly reaffirmed the conclusion of participants at the Yaoundé Conference that where a CHW has no other source of income, and the time demanded by the functions assigned represents a significant proportion of the day, then the CHW should receive some remuneration, in cash or in kind, from the community or the government or both (*5*).

Decisions on whether, or how much, CHWs should be paid, and who should pay depend upon the type of function they are expected to perform. These matters cannot be prescribed. Governments must define what type of CHW programme the country needs, and what priority and resources it is prepared to allocate to it *vis-à-vis* other needs. This will determine whether funds are available to finance the programme, including the payment of CHWs. If governments continue to allocate a high proportion of their health budgets to tertiary health care, and to medical services and personnel, it is unlikely that they will have the resources to cover adequately the costs of preventive and other primary health care services, let alone to provide incentives for CHWs or pay their wages.

Although CHW programmes cannot be maintained permanently on a purely voluntary basis, volunteers may have an important role. Once the community itself is effectively involved in primary health care, a number of health tasks may be performed by community members on a voluntary basis. Ultimately, if and when primary health care is fully implemented, families themselves will become "health workers". Volunteers can also carry out health promotion and information tasks that do not require full-time involvement.

Paid CHWs and volunteers are not mutually exclusive. On the contrary, they can play complementary roles in a mutually reinforcing partnership. While many primary health care tasks are more likely to be performed by a well-trained, remunerated and

accountable CHW, the much needed complementary tasks of community mobilization and education can be performed by community leaders on a voluntary or semi-voluntary basis.

The Study Group distinguished between CHWs working in rural and urban areas. CHWs in a cash economy, in highly populated urban areas, are unlikely to be in a position to work without pay, whereas traditional rural health workers, such as traditional birth attendants, do not expect a salary, although they may charge for their services. Rural CHWs are more likely to accept payment in kind and are often themselves small-scale farmers or farm workers.

There is no one definitive answer to the question of who should pay CHWs. It is determined mainly by the type of programme. If it is highly structured, and the CHW has specific responsibilities and is accountable to an authority for the performance of a set of tasks, then it is normal for the authority, whether government, nongovernmental organization or local council, to pay. However, a CHW who is accountable mainly to the community, or performs only services that are required by the community, can be expected to charge the community for services in cash or in kind, or the community may decide on a suitable recompense. The Study Group warned against a "fee for service" arrangement, because of the tendency it induces in CHWs to concentrate on curative services, for which they can charge fees, and thereby to neglect preventive and health promotional tasks.

4.6.2 *Career prospects*

There is evidence from several countries of conflict between the aspirations of CHWs and the intentions of CHW programmes. Such conflict is most evident when CHWs have been incorporated into the civil service. Many see their training as a first step on the ladder to a salaried civil-service job, and their demands are often for a more clearly defined career structure and proper promotion prospects. The possible career structure can be considered from the point of view of either the health sector or the individual. Two tasks to which experienced and able CHWs can contribute notably outside their own communities are supervision and training. By doing so, however, the best CHWs may move away from, and hence be "lost" to, their own communities (*3*). They may even be absorbed into the bureaucracy. The qualities that led to their promotion may then no longer be appropriate, and they may cease to make an effective

contribution. For example, this occurs commonly in Papua New Guinea, where aid-post orderlies promoted to supervisors often turn their backs on what they have come to see as the hardships of rural life. Nevertheless, an able CHW is often the best-equipped health worker to teach and supervise, and is the least likely to offer an unsuitable role model. One means of reducing the loss to their own communities of the experienced CHWs who accept these tasks is to permit them to operate from their home bases.

A number of countries offer prospects of personal advancement. In China, the best "barefoot doctors" used to be accepted for medical education, and in Sudan and the United Republic of Tanzania, CHWs have been able to obtain permanent positions in the health service. Such promotion is an attractive prospect in countries where salaried positions are very hard to obtain, but the possibility must inevitably attract recruits who are less likely to persevere with the generally conceived role of the CHW. It may therefore be unwise to design a career structure which does more than provide for the needs of the CHW programme for supervisors and trainers.

The issue of career structure is related to some extent to what the term "community health worker" signifies. The term is a generic one and does not have the same meaning everywhere. A CHW who is a casual volunteer worker or a traditional birth attendant in a rural area will be unlikely to have career aspirations. If however, CHWs are made employees, they should not be denied opportunities of promotion.

4.6.3 *Hours of work*

Hours of work will be determined by the nature of the employment. Performing the normal range of a CHW's service and development functions is a full-time job; a part-time designation implies either a small catchment population to serve or a restricted range of functions.

4.7 Cost and financing

The Study Group noted that the financial implications of properly supported national programmes had not been determined. The failure to make cost assessments of this sort reflects the common failure to appreciate the broad needs of effective CHW programmes. The range of support services, without which CHWs cannot function

effectively, needs to be planned and costed. Studies of such planning and cost assessment are urgently needed to impress upon health planners the importance of providing for the necessary support services.

The lack of adequate budgeting for CHW programmes is often associated with the absence of defined cost items, which leads to unrealistic plans. Governments have sometimes also been misled into thinking that a shift of emphasis from institutional to community services will result in expanding services at no cost to government. Experience now shows, however, that the costs of training, supervision, personnel and transport can be very high, and that these items require careful planning and make considerable demands on government expenditure.

The major costs of a CHW programme are incurred in obtaining:

—a community that is well informed and has organized itself to protect and promote its own health,
—a functioning village committee,
—trained CHWs, and
—adequate material and logistic support.

These costs are difficult to measure and evaluate. However, estimates can be made, for example of the amount of time spent, the transport required and the resources utilized for various items.

4.7.1 *Community finance*

It is commonly assumed that community involvement entails no more than contributing to a programme in cash or in kind. It implies much more, however, including participation in programme planning from its inception, and in its financial management. Communities must be guided in understanding their role and what they should expect from the CHW programme.

It is a general view that communities should contribute towards the costs of CHW programmes. This increases self-reliance and may be a key to community participation. However, since many communities cannot afford the total cost, the deficiency has to be made good by the government and by nongovernmental organizations. On no account, however, should the community be subjected to "double taxation": supporting both the formal health system, including the sophisticated urban services, and its own CHW programme.

Income-generating activities have proved very difficult to realize on any significant scale. A group effort by the community to generate income, for example from food production or by charging a fee for a water point, can ensure the completion of specific projects but not the long-term maintenance of programmes.

One fairly reliable means of community funding is the sale of drugs. In many countries, people may have little choice but to contribute something towards the cost of medicines, but this way of funding CHW programmes should be questioned on general grounds. Where the long-term aim is to develop broad programmes for health improvement, the use of profits from drug sales to pay CHWs' salaries can only reinforce their dispensing role to the detriment of the primary health care approach, and possibly also to the detriment of patients, if prescribing practices are questionable.

Efforts aimed at raising community awareness and understanding of the rationale of CHW programmes, and assisting in community organization for effective involvement in primary health care, are essential if communities are to make a significant contribution, and these efforts need strong back-up from support structures.

4.7.2 *Intra-agency and interagency collaboration*

Financing a CHW programme could be a collaborative effort of the relevant government sectors, nongovernmental organizations and the communities to be served. This collaboration should begin with the health sector itself, which depends on CHWs for its various services to reach the people in the community. The essential elements of primary health care have to reach the community in a coordinated systematic way, and CHWs need training and support for their role in achieving this. Training—by competent trainers—and supervision should be arranged jointly by the service and the training subsystems.

The health sector can seek the collaboration of the other sectors only when it has organized itself internally to permit intersectoral collaboration. The various sectors must share a common concept of health, and the means of collaboration must allow the realization in practice of the concept. This demands coordination of the contributions of different sectors in such areas as training, supplies and transport, building, and provision of equipment.

It is becoming increasingly evident that, in many countries, although communities are becoming aware of—and are generating

a demand for—services, the health system is not making the services available and accessible. It appears as though placing a CHW in a community absolves the health system from providing a health centre or other appropriate facility. The services remain far from the CHW and the people, and are too expensive and inconvenient for communities to use.

4.8 Monitoring and evaluation

Although the principles and methods of programme evaluation are well known, they are largely neglected in regard to CHW programmes. The Study Group stressed the need for plans to provide from the beginning for monitoring and evaluation as a basic element of the management of CHW programmes.

Owing to the lack of serious evaluation of CHW programmes, little is known about their levels of performance or about the impact they make on the health of communities. At present two types of monitoring and evaluation take place, but neither is adequate:

(*a*) a formal system, using mainly quantitative information concerned with allocation of resources and with organizational processes, e.g., quantity of drugs used, number of meetings attended—it is usually rigid and too limited in scope; and

(*b*) a less formal *ad hoc* system, based on unstructured observations and impressions—at the local level, this produces information suitable for local short-term decision-making, but it is not adequate for consolidation and comparison on a larger scale or over longer periods of time.

Monitoring and evaluation of CHW programmes should be geared to participatory processes in which the CHW and the community are themselves responsible for monitoring and evaluating their services, rather than being the objects of assessment. From the experience of its members, the Study Group examined some examples of such participatory evaluation in nongovernmental programmes in Kenya and Pakistan, and in Thailand. Methods mentioned included group discussion, self-assessment and peer appraisal. In one country, the performance of CHWs is monitored by comparing each individual's average yearly performance with her or his best monthly performance of the same year; in this way reasons for differences may be identified without the loss of face that might occur from comparison of the performances of different

CHWs. Participatory evaluation is in itself one aspect of the bridge between the community and the health services which the CHW is expected to represent. To bring this about, the methods and the terminology of evaluation, as taught to the CHW and used by the supervisors, must be kept simple and logical.

The methods of evaluating such basic variables as health status, health risks, access, acceptability, coverage, costs and equity should be explained in simple language—but without loss of scientific soundness—so that they can be applied by CHWs and their supervisors. This will require a reorientation of health professionals towards the use of appropriate language.

Objectives must be clearly defined if their achievement is to be monitored and evaluated. However, the general objective of community development, to which CHW activities are designed to contribute, is highly complex, and the CHW programme is only one of several organized means by which its achievement is being promoted. It involves the health team, for example, as well as non-health sectors concerned with development. The contribution of CHW programmes is therefore difficult to assess. There are at present few, if any, techniques or indicators for doing so in a satisfactory way. The Group considered it essential to search for and document experiences in this area, as well as in the general assessment of health care and of its impact on health status.

4.8.1 *Information systems*

Information systems are critical to the monitoring and evaluation of CHWs. Current formal systems in most countries are too centralized, saturated with excess data and of little use for influencing programme development.

There is no doubt that CHWs are capable of gathering useful health-related information, even those who have the most limited formal education. Where literacy is inadequate, tally systems have been devised. However, such data-collection activities must be considered in relation to the actual use that may be made of the specific information obtained.

Data collection may have three main functions. The first is to provide a continuing record of care for each patient (clinical records). Where such health records are held by individuals, particularly mothers, it would be proper for literate CHWs to enter a note of their assessments or treatments. This activity makes only

a limited demand on CHWs. The second is to supply those in charge with information on disease patterns and on the performance of health services. The problems of using such information are not easily overcome; however, properly designed and supported simple data systems can be incorporated into CHW programmes. The third function is to influence the working practices of those collecting the data.

This data-collection function should not be limited to clinical activities; however, the particular content of data-collection forms will depend upon the priorities in each programme and the level of education of CHWs.

An efficient reporting system provides a key link between the periphery and the centre. Appropriate and timely data can provide an indication of the effectiveness of a programme, and suggest modifications where targets are not being met. A reporting system provides the only consistent means for programme managers to monitor events at the periphery, and may have a major influence on the way that CHWs and their supervisors carry out their tasks. For these reasons the design and support of information systems are key tasks in effective CHW programmes.

4.8.2 *Programme elements to be evaluated*

Inputs. These include: the community itself—its main characteristics, health knowledge, beliefs, practices and health problems; CHW training programmes; and variables associated with CHWs as individuals—their knowledge, skills, values, acceptability to the community and awareness of their own limitations. Constraints and obstacles to the functioning of CHWs should also be considered, e.g., inconsistency between policies and resource allocation; unclearness or ambiguity in the definition of their role; and inadequate support.

Activities and their management. The monitoring and evaluation of CHW activities require the previous determination of what these activities should be and what the balance should be among them. Thus, monitoring would detect any excess of time spent on such activities as recording and reporting, to the detriment of other priority tasks such as immunization or other preventive or social components of primary health care. It is particularly important to monitor the efforts directed at community development and

intersectoral cooperation. Simple evaluation techniques should enable CHWs and communities, with the help of the health personnel who supervise them, to determine and follow up trends in the utilization of their services and the population coverage attained with the essential elements of primary health care, as well as the costs incurred.

The management of CHWs needs careful evaluation since it is a major component of the development of CHWs as health personnel; good management involves attention to the efficiency of the selection process for CHWs, remuneration, work organization, schedules and procedures, continuing education, supervision, and material support for their work.

Outcomes. A few CHW-based programmes have been evaluated in terms of their impact or outcome, mainly in district areas or even smaller units. One country, Costa Rica, has been able to offer some evidence of increased life expectancy in relation to its national rural and community health programmes, which are basically CHW programmes.

In addition to life expectancy, indicators of outcome may include: infant and child mortality/morbidity, maternal mortality/morbidity, prevalence of malnutrition, patterns of hospitalization, age-specific death rates, and—in the area of social development—community decision-making, self-reliance and organization for health. Information that will enable health teams to relate changes in these indicators to changes in health-care coverage can, in most cases, be collected with the participation of CHWs themselves, if they have the necessary education, support and orientation. The Study Group stressed the need to test the use of indicators for assessing progress in community development, intersectoral cooperation and health-team involvement in communities.

The Group considered that countries would gradually develop the ability to measure outcomes of CHW programmes and that, in the beginning, it should be sufficient to increase awareness of the general health trends in each community and their relation to local health care and development efforts.

5. CONCLUSIONS

In the years following the Declaration of Alma-Ata in 1978, many CHW programmes were established as a positive response to the

urgent health needs of underserved populations. The Study Group's review of the literature and discussions of experiences in CHW programmes left no doubt that CHWs play a critical role in the promotion of people's health, and that their effectiveness can and needs to be enhanced. However, it would be unrealistic to expect widespread and immediate gains from a process as complex as the mobilization of CHWs. Sufficient time must be allowed for CHW programmes to mature and to make an impact, and for the appearance and consolidation of the broad-based changes to which they are expected to contribute. The Study Group endorsed in principle the conclusion of the Yaoundé Conference that CHW programmes should be supported and strengthened (*5*). The Study Group's conclusions were as follows.

1. CHWs can be effective agents of health improvement; the failures of CHW programmes can be attributed to inadequacies in their planning and implementation, not to failings of individual CHWs or to the concept of the CHW. With notable exceptions, these programmes have not received the support they need. Failure is inevitable when CHW programmes are approached as piecemeal development projects and organized as vertical programmes unrelated to national and district health systems.

2. Most countries have no clear national policies or strategies for the establishment of CHW programmes, which could account for the weaknesses and problems described in this report. Political will, national commitment and community involvement are necessary preconditions of effective programmes, and these have not been forthcoming to the degree required.

3. A fundamental factor is the lack of specific and regular budgetary support from governments to sustain training, supervision, logistics and financial incentives, which are such important factors in the success of programmes. If governments continue to spend a high proportion of their health budgets at the tertiary level, it is unlikely that they will have the resources to cover adequately the costs of primary health care services, let alone to provide financial incentives to CHWs.

4. CHWs have significant roles both in providing health services (promotive, preventive, curative and rehabilitative) and in development work covering many aspects of social and community life which affect a community's health and well-being. Often, however, they act largely as extenders of health services, sometimes

to the neglect or even the exclusion of community or development work.

5. CHW programmes and roles should be derived from the expression of a community's needs and expectations, and adapted to its socioeconomic circumstances. Community participation is an essential determinant of effectiveness in the planning, implementation and evaluation of CHW programmes.

6. Countries may decide to incorporate their CHWs into the formal civil service, but in doing so they must anticipate possible conflict between the individual aspirations of CHWs for self-advancement and the requirements of the CHW programme.

7. CHW programmes need not be confined to a single type of CHW. Different kinds of CHW, with, for example, different levels of training or numbers and types of tasks within their programmes, may be more flexible and responsive to local needs and in a better position to build on local resources.

8. Nongovernmental organizations play an important part in CHW programmes; their contribution should be encouraged, within the framework of a clear national health policy.

9. Intersectoral cooperation, at national, district and other levels, is necessary for the multisectoral activities of CHWs. Without this support such activities cannot be expected to succeed.

10. To be successful, a CHW programme must have a support group, for example, a development council or a health committee. Programme effectiveness depends greatly on the strength of these support groups.

11. The most important criteria to be applied in recruiting CHWs are acceptability to the community and capacity to influence it. However, the preferred characteristics of candidates, with regard to age, sex, education and marital status, may vary from one programme to another. The criteria applied for recruitment should therefore be those that best suit the community in question.

12. Selection criteria must take account of whether CHWs are to be paid (and by whom) or are voluntary workers, of whether they are to work full-time or part-time, and of other social, economic and cultural circumstances.

13. Training should take place either in the community in which the prospective CHWs are to serve or in the same or comparable circumstances elsewhere. It should not take place in national or regional training institutions.

14. Too few CHW programmes have incorporated proper monitoring and evaluation components.

6. RECOMMENDATIONS

After considering its conclusions, the Study Group agreed on the following recommendations, which it regarded as essential preconditions for maintaining effective CHW programmes.

6.1 Recommendations to countries

1. Countries should give CHW programmes the necessary attention, in particular to define and establish the mechanisms of providing and maintaining the support that is essential to their success.

2. Countries should determine the essential elements of their CHW programmes, make the necessary cost estimates, identify the sources of finance and establish adequate budgetary allocations for strengthening programme capabilities within district health systems. These activities must be undertaken, for both the national and the district level, systematically and routinely, not on an *ad hoc* basis or only when resources become available.

3. Countries should establish new district health systems and strengthen existing ones to ensure effective CHW programmes. Funds should be decentralized to the district level to enable communities to develop their own CHW programmes, according to their needs and priorities.

4. Countries should consider using different types of workers in their CHW programmes, to respond more closely to particular local needs and resources.

5. CHWs should be selected jointly by the community and health personnel.

6. National selection guidelines are valuable where they encourage the recruitment of CHWs with long-term commitment to their tasks and access to risk groups.

7. CHW training programmes should be established with specific objectives in line with national primary health care strategies and based on the relevant community needs and conditions.

8. Trainers for CHW programmes must be skilled in the process of community mobilization for development, in communication and

in community dynamics. Countries should recognize that training of trainers is an essential component of CHW programmes, and should establish a system for preparing personnel to manage CHW programmes.

9. Supervision should be supportive and team-work involving CHWs themselves, the community and technical personnel should be emphasized.

10. If a CHW has no other source of income, and the time demanded by the functions assigned represents a significant proportion of the working day, then he or she should receive some remuneration, in cash or in kind, from the community or the government, or both.

11. Policies in relation to the personal advancement of CHWs should be guided by their benefits to the CHW programme as a whole. The most suitable means for advancement may include a grading system based upon merit, as well as promotion to training and supervisory posts. Job mobility towards tasks that remove CHWs from their communities should not be encouraged.

12. Monitoring and evaluation, involving CHWs, the community and technical personnel, should be developed in each CHW programme, and geared to promoting both community participation and intersectoral coordination.

13. Countries should critically examine the performance of CHWs and undertake deliberate task selection or task review in accordance with community health needs, available support and resources.

14. Countries should continue to encourage nongovernmental organizations to support CHW schemes and to develop innovative strategies that could help guide government CHW programmes.

6.2 Recommendations to WHO

1. WHO should consider intensifying its efforts in collecting and disseminating information on CHWs, especially on successes and failures of national programmes, through exchange visits, fellowships, seminars and publications.

2. WHO should promote the establishment of new CHW programmes and consider assisting in the evaluation and improvement of existing programmes, through the provision of expertise and other types of support.

3. WHO should promote operational and applied research on CHW schemes and district health systems, including such aspects as community involvement, supervision, cost and financing, training, and attrition (drop-out) of CHWs.

4. WHO should encourage greater understanding and support from health professionals, whose behaviour, comments and attitudes have not always been supportive of CHW programmes.

ACKNOWLEDGEMENTS

Dr S. Frankel, Senior Lecturer, College of Medicine, University of Wales, Cardiff, Wales, prepared the working document of the Study Group and assisted in writing the report. The following reviewed and commented upon the working document: Dr I. Askew, Institute of Population Studies, University of Exeter, Exeter, England; Dr A.I. Beili, Ministry of Health, Khartoum, Sudan; Dr D. Chauls, Management Sciences for Health, Tihama Primary Health Care Project, Sana'a, Yemen; Dr I. Durana, National University of Colombia, Bogotá, Colombia; Mrs E. McFarquhar, Ministry of Health, Kingston, Jamaica; Dr D. Ross, London School of Hygiene and Tropical Medicine, London, England; Dr D. Sanders, Faculty of Medicine, University of Zimbabwe, Harare, Zimbabwe; Dr T.K. Sinyangwe, Primary Health Care Specialist, Ministry of Health, Zambia (who also attended the meeting); and Dr D. Werner, The Hesperian Foundation, Palo Alto, CA, USA. The Study Group gratefully acknowledges their contributions to its work.

The Study Group also acknowledges the contributions made to its discussions by the following WHO staff members: Dr D.B. Bisht, Director of Health System Infrastructure, WHO Regional Office for South-East Asia, New Delhi, India; Dr D. Flahault, Chief Medical Officer for Health Team Development, Division of Health Manpower Development, Geneva, Switzerland; Dr T. Fülöp, Director, Division of Health Manpower Development, Geneva, Switzerland; Dr M. Jancloes, Medical Officer, Health for All Strategy Coordination, Geneva, Switzerland; Dr L. Lopez-Bravo, Leprosy Unit, Division of Communicable Diseases, Geneva, Switzerland; Dr F. Partow, Assistant Director-General, Geneva, Switzerland; and Dr L. Valdivia, Regional Officer, WHO Regional Office for the Americas, Washington, DC, USA.

REFERENCES

1. WORLD HEALTH ORGANIZATION/UNITED NATIONS CHILDREN'S FUND. *Alma-Ata 1978: Primary health care. Report of the International Conference on Primary Health Care, Alma-Ata, USSR, 6–12 September 1978.* Geneva, World Health Organization, 1978 ("Health for All" Series, No. 1).

2. *Primary health care. The community health worker. Report on a UNICEF/WHO Interregional Study and Workshop (Kingston, Jamaica) 1979/1980.* Geneva, World Health Organization, 1980 (unpublished document PHC/80.2).[1]

[1] Available on request from Division of Strengthening of Health Services, World Health Organization, Geneva, Switzerland.

3. *Community Health Workers. A report of the World Health Organization Inter-Regional Study and Workshop, 4–8 July 1983, Manila, Philippines.* Geneva, World Health Organization 1984 (unpublished document SHS/HMD/84.1).[1]
4. *Report of interregional meeting on strengthening the performance of community health workers in primary health care, New Delhi, 2–4 December 1985* (unpublished document).[1]
5. *Community health workers: pillars for health for all. Report of the Interregional Conference, Yaoundé, Cameroon, 1–5 December 1986.* Geneva, World Health Organization, 1987 (unpublished document SHS/CIH/87.2).[1]
6. *The primary health worker.* Geneva, World Health Organization, 1980.
7. *The community health worker: working guide, guidelines for training, guidelines for adaptation.* Geneva, World Health Organization, 1987.
8. OFOSU-AMAAH, V. *National experience in the use of community health workers. A review of current issues and problems.* Geneva, World Health Organization, 1983 (WHO Offset Publication, No. 71).

SELECTED FURTHER READING

ALDERMAN, M.H. ET AL. A young-child nutrition programme in rural Jamaica. *Lancet*, **1**: 1166–1168 (1973).

AMERICAN PUBLIC HEALTH ASSOCIATION. *The state of the art of delivering low cost health services in less developed countries: a summary study of 180 health projects.* Washington, DC, APHA, International Health Programmes, 1977.

BARBEE, E.L. Biomedical resistance to ethnomedicine in Botswana. *Social science and medicine*, **22**: 75–80 (1986).

BERGGREN, W.L. ET AL. Reduction of mortality in rural Haiti through a primary-health-care program. *New England journal of medicine*, **304**: 1325–1330 (1981).

BERMAN, P.A. Village health workers in Java, Indonesia: coverage and equity. *Social science and medicine*, **19**: 411–422 (1984).

BIBEAU, G. From China to Africa: the same impossible synthesis between traditional and Western medicines. *Social science and medicine*, **21**: 937–943 (1985).

BOSE, A. The community health worker scheme: an Indian experiment. In: Morely, D. et al., ed. *Practising health for all.* Oxford, Oxford University Press, 1983, pp. 38–48.

BOSSERT, T.J. & PARKER, D.A. The political and administrative context of primary health care in the Third World. *Social science and medicine*, **18**: 693–702 (1984).

BRYANT, J.H. Community health workers: the interface between communities and health care systems. *WHO Chronicle*, **32**: 144–148 (1987).

CHABOT, J. & WADDINGTON, C. Primary health care is not cheap: a case study from Guinea Bissau. *International journal of health services*, **17**: 387–409 (1987).

CHEN, P.-C. & TUAN, C.-H. Primary health care in rural China: post-1978 development. *Social science and medicine*, **17**: 1411–1417 (1983).

CHEN, P.C.Y. & TAN, Y.K. Primary health care among the Iban of Sarawak. *Tropical and geographical medicine*, **33**: 403–409 (1981).

CHOWDHURY, Z. The good health worker will inevitably become a political figure. *World health forum*, **2**: 55–56 (1981).

[1] Available on request from Division of Strengthening of Health Services, World Health Organization, Geneva, Switzerland

COLE-KING, S. *Approaches to the evaluation of maternal and child health care in the context of primary health care*. Geneva, World Health Organization, 1979 (unpublished document HSM/79.2; available on request from Maternal and Child Health, World Health Organization, Geneva, Switzerland).

COLE-KING, S. ET AL. Evaluation of primary health care—a case study of Ghana's rural health care system. *Journal of tropical medicine and hygiene*, **82**: 214–228 (1979).

ENGLAND, R. More myths in international health planning. *American journal of public health*, **68**: 153–159 (1978).

ESSEX, B. A new approach to decision making in primary health care. *Proceedings of the Royal Society of London, B*, **209**: 89–96 (1980).

FENDALL, N.R.E. & TIWARI, I.C. Trends in primary health care. *Tropical doctor*, **10**: 78–85 (1980).

FLAHAULT, D. The relationship between community health workers, the health services, and the community. *WHO Chronicle*, **32**: 149–153 (1978).

FRANKEL, S.J. Peripheral health workers are central to primary health care: lessons from Papua New Guinea's aid posts. *Social science and medicine*, **19**: 279–290 (1984).

FRANKEL, S.J. & LEHMANN, D. Oral rehydration therapy: combining epidemiological and anthropological approaches in the evaluation of a Papua New Guinea programme. *Journal of tropical medicine and hygiene*, **87**: 137–142 (1984).

GONG YOU-LONG & CHAO LI-MIN The role of barefoot doctors. In: Hinman, A.R. et al., ed. Health services in Shanghai County. *American journal of public health*, **72** (suppl.): 59–61 (1982).

HALIMAN, A. & WILLIAMS, G. Can people move bureaucratic mountains? Developing primary health care in rural Indonesia. *Social science and medicine*, **17**: 1449–1455 (1983).

HARRISON, P. Success story. *World health*, Feb–March: 14–19 (1981).

ISLAM, K. & BACHMAN, S. PHC in Bangladesh—too much to ask? *Social science and medicine*, **17**: 1463–1466 (1983).

JANZEN, J.M. *The quest for therapy in Lower Zaire*. Berkeley, University of California Press, 1978.

JOBERT, B. Populism and health policy: the case of community health volunteers in India. *Social science and medicine*, **20**: 1–28 (1985).

JUSTICE, J. The invisible worker: the role of the peon in Nepal's health service. *Social science and medicine*, **17**: 967–970 (1983).

KIELMANN, A.A. ET AL. The Narangwal nutrition study: a summary review. *American journal of clinical nutrition*, **31**: 2040–2052 (1978).

KLEINMAN, A. *Patients and healers in the context of culture*. Berkeley, University of California Press, 1980.

LAMBORAY, J.-L. & LAING, C. Partners for better health. *World health forum*, **5**: 30–34 (1984).

LAMPTEY, P.R. ET AL. Training village health workers in rural Ghana. *World health forum*, **1**: 52–56 (1980).

Lay reporting of health information. Geneva, World Health Organization, 1978.

LESLIE, C. The ambiguities of medical revivalism in modern India. In: Leslie, C., ed. *Asian medical system*. Berkeley, University of California Press, 1976, pp. 356–367.

MCCORD, C. & KIELMANN, A.A. A successful programme for medical auxiliaries treating childhood diarrhoea and pneumonia. *Tropical doctor*, **8**: 220–225 (1978).

MARCHIONE, T.J. Evaluating primary health care and nutrition programs in the context of national development. *Social science and medicine*, **19**: 225–235 (1984).

MARU, R.M. The community health volunteer scheme in India: an evaluation. *Social science and medicine*, **17**: 1477–1483 (1983).

MORLEY, D. *Paediatric priorities in the developing world*. London, Butterworths, 1973.

MORLEY, D. ET AL., ed. *Practising health for all*. Oxford, Oxford University Press, 1983.

MUKHOPADHYAY, M. Human development through primary health care: case studies from India. In: Morley, D. et al., ed. *Practising health for all*. Oxford, Oxford University Press, 1983, pp. 133–144.

RADFORD, A.J. Village-based health and medical care resources. In: Hetzel, B., ed. *Basic health care in developing countries: an epidemiological perspective*. Oxford, Oxford University Press, 1978, pp. 146–169.

REID, R.A. ET AL. Managing medical supply logistics among health workers in Ecuador. *Social science and medicine*, **22**: 9–14 (1986).

RIFKIN, S.B. Primary health care in Southeast Asia: attitudes about community participation in community health programmes. *Social science and medicine*, **17**: 1489–1496 (1983).

RONAGHY, H.A. & SOLTER, S. Is the Chinese "barefoot doctor" exportable to rural Iran? *Lancet*, **1**: 1331–1333 (1974).

SANDERS, D. & CARVER, R. *The struggle for health*. London, Macmillan, 1985.

SCHOLL, E.A. An assessment of community health workers in Nicaragua. *Social science and medicine*, **20**: 207–214 (1985).

SHAH, U. ET AL. Using community health workers to screen for anaemia. *World health forum*, **5**: 35–36 (1984).

SIGNER, E. & GALSTON, A.W. Education and science in China. *Science*, **175**: 15–23 (1972).

STARK, R. Lay workers in primary health care: victims in the process of social transformation. *Social science and medicine*, **20**: 269–275 (1985).

STONE, L. Primary health care for whom? Village perspectives from Nepal. *Social science and medicine*, **22**: 293–302 (1986).

STORMS, D. *Training and use of auxiliary health workers: lessons from developing countries*. Washington, DC, American Public Health Association, 1979 (American Public Health Association Monograph Series, No. 3).

THOMPSON, N. Australian aboriginal health and health-care. *Social science and medicine*, **18**: 939–948 (1984).

TWUMASI, P.A. & FREUND, P.J. Local politicization of primary health care as an instrument for development: a case study of community health workers in Zambia. *Social science and medicine*, **20**: 1073–1080 (1985).

VILLEGAS, H. Extension of health service coverage in Costa Rica. *Bulletin of the Pan American Health Organization*, **9**: 303–310 (1977).

WANG, V.L. Training of the barefoot doctor in the People's Republic of China: from prevention to curative service. *International journal of health services*, **5**: 475–488 (1975).

WEED, L.L. Medical records that teach and guide. *New England journal of medicine*, **278**: 652–657 (1968).

WERNER, D. & BOWER, B. *Helping health workers learn*. Palo Alto, The Hesperian Foundation, 1982.

WERNER, D. Health care in Cuba: a model service or a means of social control—or both? In: Morley, D. et al., ed. *Practising health for all*. Oxford, Oxford University Press, 1983, pp. 17–37.

WILLIAMS, G. & SATOTO Sociopolitical constraints on primary health care: a case study from Indonesia. In: Morley, D. et al., ed. *Practising health for all*. Oxford, Oxford University Press, 1983, pp. 208–228.

WORLD HEALTH ORGANIZATION
TECHNICAL REPORT SERIES

Recent reports:

No.		Sw. fr.
740	(1986) **Joint FAO/WHO Expert Committee on Brucellosis** Sixth report (132 pages)	18.—
741	(1987) **WHO Expert Committee on Drug Dependence** Twenty-third report (64 pages)	9.—
742	(1987) **Technology for water supply and sanitation in developing countries** Report of a WHO Study Group (38 pages)	7.—
743	(1987) **The biology of malaria parasites** Report of a WHO Scientific Group (229 pages)	32.—
744	(1987) **Hospitals and health for all** Report of a WHO Expert Committee on the Role of Hospitals at the First Referral Level (82 pages)	12.—
745	(1987) **WHO Expert Committee on Biological Standardization** Thirty-sixth report (149 pages)	20.—
746	(1987) **Community-based education for health personnel** Report of a WHO Study Group (89 pages)	12.—
747	(1987) **Acceptability of cell substrates for production of biologicals** Report of a WHO Study Group (29 pages)	5.—
748	(1987) **WHO Expert Committee on Specifications for Pharmaceutical Preparations** Thirtieth report (50 pages)	9.—
749	(1987) **Prevention and control of intestinal parasitic infections** Report of a WHO Expert Committee (86 pages)	12.—
750	(1987) **Alternative systems of oral care delivery** Report of a WHO Expert Committee (58 pages)	9.—
751	(1987) **Evaluation of certain food additives and contaminants** Thirtieth report of the Joint FAO/WHO Expert Committee on Food Additives (57 pages)	9.—
752	(1987) **WHO Expert Committee on Onchocerciasis** Third report (167 pages)	24.—
753	(1987) **Mechanism of action, safety and efficacy of intrauterine devices** Report of a WHO Scientific Group (91 pages)	12.—
754	(1987) **Progress in the development and use of antiviral drugs and interferon** Report of a WHO Scientific Group (25 pages)	5.—
755	(1987) **Vector control in primary health care** Report of a WHO Scientific Group (61 pages)	9.—
756	(1987) **Children at work: special health risks** Report of a WHO Study Group (49 pages)	9.—
757	(1987) **Rational use of diagnostic imaging in paediatrics** Report of a WHO Study Group (102 pages)	14.—
758	(1987) **The hypertensive disorders of pregnancy** Report of a WHO Study Group (114 pages)	16.—

759 (1987) **Evaluation of certain food additives and contaminants**
Thirty-first report of the Joint FAO/WHO Expert Committee on Food Additives (53 pages) ..... 9.—

760 (1987) **WHO Expert Committee on Biological Standardization**
Thirty-seventh report (203 pages) ..... 28.—

761 (1988) **WHO Expert Committee on Drug Dependence**
Twenty-fourth report (34 pages) ..... 6.—

762 (1988) **Training and education in occupational health**
Report of a WHO Study Group (47 pages) ..... 6.—

763 (1988) **Evaluation of certain veterinary drug residues in food**
Thirty-second report of the Joint FAO/WHO Expert Committee on Food Additives (40 pages) ..... 6.—

764 (1988) **Rheumatic fever and rheumatic heart disease**
Report of a WHO Study Group (58 pages) ..... 8.—

765 (1988) **Health promotion for working populations**
Report of a WHO Expert Committee (49 pages) ..... 8.—

766 (1988) **Strengthening ministries of health for primary health care**
Report of a WHO Expert Committee (110 pages) ..... 12.—

767 (1988) **Urban vector and pest control**
Eleventh report of the WHO Expert Committee on Vector Biology and Control (77 pages) ..... 9.—

768 (1988) **WHO Expert Committee on Leprosy**
Sixth report (51 pages) ..... 8.—

769 (1988) **Learning together to work together for health**
Report of a WHO Study Group (72 pages) ..... 9.—

770 (1988) **The use of essential drugs**
Third report of the WHO Expert Committee (63 pages) ..... 8.—

771 (1988) **WHO Expert Committee on Biological Standardization**
Thirty-eighth report (221 pages) ..... 26.—

772 (1988) **Appropriate diagnostic technology in the management of cardiovascular diseases**
Report of a WHO Expert Committee (41 pages) ..... 6.—

773 (1988) **Smokeless tobacco control**
Report of a WHO Study Group (81 pages) ..... 11.—

774 (1988) **Salmonellosis control: the role of animal and product hygiene**
Report of a WHO Expert Committee (83 pages) ..... 11.—

775 (1989) **WHO Expert Committee on Drug Dependence**
Twenty-fifth report (48 pages) ..... 6.—

776 (1989) **Evaluation of certain food additives and contaminants**
Thirty-third report of the Joint FAO/WHO Expert Committee on Food Additives (64 pages) ..... 8.—

777 (1989) **Epidemiology of work-related diseases and accidents**
Tenth report of the Joint ILO/WHO Committee on Occupational Health (71 pages) ..... 9.—

778 (1989) **Health guidelines for the use of wastewater in agriculture and aquaculture**
Report of a WHO Scientific Group (74 pages) ..... 9.—

779 (1989) **Health of the elderly**
Report of a WHO Expert Committee (98 pages) ..... 12.—

WHO publications may be obtained, direct or through booksellers, from :

ALGERIA : Entreprise nationale du Livre (ENAL), 3 bd Zirout Youcef, ALGIERS

ARGENTINA : Carlos Hirsch, SRL, Florida 165, Galerias Guemes, Escritorio 453/465, BUENOS AIRES

AUSTRALIA : Hunter Publications, 58A Gipps Street, COLLINGWOOD, VIC 3066

AUSTRIA : Gerold & Co., Graben 31, 1011 VIENNA I

BAHRAIN : United Schools International, Arab Region Office, P.O. Box 726, BAHRAIN

BANGLADESH : The WHO Representative, G.P.O. Box 250, DHAKA 5

BELGIUM : *For books* : Office International de Librairie s.a., avenue Marnix 30, 1050 BRUSSELS. *For periodicals and subscriptions* : Office International des Périodiques, avenue Louise 485, 1050 BRUSSELS.

BHUTAN : *see* India, WHO Regional Office

BOTSWANA : Botsalo Books (Pty) Ltd., P.O. Box 1532, GABORONE

BRAZIL : Centro Latinoamericano de Informação em Ciencias de Saúde (BIREME), Organização Panamericana de Saúde, Sector de Publicações, C.P. 20381, - Rua Botucatu 862, 04023 SÃO PAULO, SP

BURMA : *see* India, WHO Regional Office

CAMEROON : Cameroon Book Centre, P.O. Box 123, South West Province, VICTORIA

CANADA : Canadian Public Health Association, 1565 Carling Avenue, Suite 400, OTTAWA, Ont. K1Z 8R1. (Tel. (613) 725-3769. Telex : 21-053-3841)

CHINA : China National Publications Import & Export Corporation, P.O. Box 88, BEIJING (PEKING)

DEMOCRATIC PEOPLE'S REPUBLIC OF KOREA : *see* India, WHO Regional Office

DENMARK : Munksgaard Book and Subscription Service, P.O. Box 2148, 1610 COPENHAGEN K (Tel. : + 45 1 12 85 70)

FIJI : The WHO Representative, P.O. Box 113, SUVA

FINLAND : Akateeminen Kirjakauppa, Keskuskatu 2, 00101 HELSINKI 10

FRANCE : Arnette, 2 rue Casimir-Delavigne, 75006 PARIS

GERMAN DEMOCRATIC REPUBLIC : Buchhaus Leipzig, Postfach 140, 701 LEIPZIG

GERMANY FEDERAL REPUBLIC OF : Govi-Verlag GmbH, Ginnheimerstrasse 20, Postfach 5360, 6236 ESCHBORN — Buchhandlung Alexander Horn, Kirchgasse 22, Postfach 3340, 6200 WIESBADEN

GREECE : G.C. Eleftheroudakis S.A., Librairie internationale, rue Nikis 4, 105-63 ATHENS

HONG KONG : Hong Kong Government Information Services, Publication (Sales) Office, Information Services Department, No. 1, Battery Path, Central, HONG KONG

HUNGARY : Kultura, P.O.B. 149, BUDAPEST 62

ICELAND : Snaebjorn Jonsson & Co., Hafnarstraeti 9, P.O. Box 1131, IS-101 REYKJAVIK

INDIA : WHO Regional Office for South-East Asia, World Health House, Indraprastha Estate, Mahatma Gandhi Road, NEW DELHI 110002

IRAN (ISLAMIC REPUBLIC OF) : Iran University Press, 85 Park Avenue, P.O. Box 54/551, TEHRAN

IRELAND : TDC Publishers, 12 North Frederick Street, DUBLIN 1 (Tel : 744835-749677)

ISRAEL : Heiliger & Co., 3 Nathan Strauss Street, JERUSALEM 94227

ITALY : Edizioni Minerva Medica, Corso Bramante 83-85, 10126 TURIN ; Via Lamarmora 3, 20100 MILAN ; Via Spallanzani 9, 00161 ROME

JAPAN : Maruzen Co. Ltd., P.O. Box 5050, TOKYO International, 100-31

JORDAN : Jordan Book Centre Co. Ltd., University Street, P.O. Box 301 (Al-Jubeiha), AMMAN

KENYA : Text Book Centre Ltd, P.O. Box 47540, NAIROBI

KUWAIT : The Kuwait Bookshops Co. Ltd., Thunayan Al-Ghanem Bldg, P.O. Box 2942, KUWAIT

LAO PEOPLE'S DEMOCRATIC REPUBLIC : The WHO Representative, P.O. Box 343, VIENTIANE

LUXEMBOURG : Librairie du Centre, 49 bd Royal, LUXEMBOURG

A/1/89

WHO publications may be obtained, direct or through booksellers, from:

MALAYSA: The WHO Representative, Room 1004, 10th Floor, Wisma Lim Foo Yong(formerly Fitzpatrick's Building), Jalan Raja Chulan, KUALA LUMPUR 05-10;P.O. Box 2550, KUALA LUMPUR 01-02, Parry's Book Center, 124-1 Jalan Tun Sambanthan, P.O. Box 10960, 50730 KUALA LUMPUR

MALDIVES: see India, WHO Regional Office

MEXICO: Libreria Interacademica S.A.,Av. Sonora 206, 06100-MEXICO, D.F.

MONGOLIA: see India, WHO Regional Office

MOROCCO: Editions La Porte, 281 avenue Mohammed V, RABAT

NEPAL: see India, WHO Regional Office

NETHERLANDS: InOr-Publikaties, P.O. Box 14, 7240 BA LOCHEM

NEW ZEALAND: New Zealand Government Printing Office, Publishing Administration, Private Bag, WELLINGTON; Walter Street, WELLINGTON; World Trade Building, Cubacade, Cuba Street, WELLINGTON, Government Bookshops at: Hannaford Burton Building, Rutland Street, Private Bag, AUCKLAND; 159 Hereford Street, Private Bag, CHRISTCHURCH; Alexandra Street, P.O. Box 857, HAMILTON; T & G Building, Princess Street, P.O. Box 1104, DUNEDIN–R. Hill & Son Ltd, Ideal House, Cnr Gillies

NORWAY: Tanum – Karl Johan A.S., P.O. Box 646, KONEDOBU

PAKISTAN: Mirza Book Agency, 65 Shahrah–E–Quaid–E-Azam, P.O. Box 729, LAHORE 3

PAPUA NEW GUINEA: The WHO Representative, P.O. Box 646, KONEDOBU

PHILIPPINES: World Health Organization, Regional Office for the Western Pacific, P.O. Box 2932, MANILA; National Book store Inc., 701 Rizal Avenue, P.O. Box 1934, MANILA

PORTUGAL: Livraria Rodrigues, 186 Rua do Ouro, LISBON 2

REPUBLIC OF KOREA: The WHO Representative, Central P.O. Box 540, SEOUL

SAUDI ARABIA: World of Knowledge for Publishing and Distribution, P.O. Box 576, JEDDAH

SINGAPORE: The WHO Reprensentative, 144 Moulmein Road, SINGAPORE 1130; Newton P.O. Box 31, SINGAPORE 9122

SOUTH AFRICA: Contact major book stores

SPAIN: Comercial Atheneum S.A., Consejo de Ciento 130-136, 08015 BARCELONA; General Moscardo 29, MADRID 20–Librefia Diaz de Sntos, P.O. Box 6050, 28006 MADRID; Balmes 417 y 419, 08022 BARCELONA

SRI LANKA: see India, WHO Regional Office

SWEDEN: For books: Aktiebolaget C.E. Fritzes Kungl. Hovbokhandel, Regeringsgatan 12, 103 27 STOCKHOLM. For periodicals: Wennergren-Williams AB, Box 30004, 104 25 STOCKHOLM

SWITZ ERLAND: Medizinischer Verlag Hans Huber, Langgasstrasse 76, 3012 BERN 9

THAILAND: see India, WHO Regional Office

UNITED KINGDOM: H.M. Stationery Office : 49 High Holborn, LONDON WCIV 6HB; 71 LOTHIAN Road, EDINBURGH EH3 9AZ, 80 Chichester Street, BELFAST BT1 4JY; Brazennose Street, MANCHESTER M60 8AS; 258 Broad Street, BIRMINGHAM B1 2HE; Southey House, Wine Street, BRISTOL BS 1 2BQ. All mail orders should be sent to: HMSO Publication Centre, 51 Nine Elms Lane, LONDON SW 8 5DR

UNITED STATES OF AMERICA: Copies of individual publications (not subscriptions):WHO Publications Center USA, 49 Sheridan Avenue, ALBANY, NY12210. Subscription orders and correspondence concerning subscriptions should be addressed to the World Health Organization, Distribution and Sales, 1211 GENEVA 27, Switzerland. Publications are also available from the United Nations Bookshop, NEW YORK, NY 10017 (retail only)

USSR: For readers in the USSR requiring Russian editions: Komsomolskij prospekt 18, Medicinskaja Kniga, MOSCOW – For readers outside the USSR requiring Russian editions: Kuzneckij most 18, Mezdunarodnaja Kniga, MOSCOW G-200

VENEZUELA: Libreria Medica Paris, Apartado 80, 681, CARACAS 106

YUGOSLAVIA: Jugoslovenska Knjiga, Terazije 27/II,11000 BELGRADE

ZIMBABWE: Textbook Sales (PVT) Ltd, 1 Norwich Union Centre, MUTARE

Special terms for developing countries are obtainable on application to the WHO Representatives or WHO Regional Offices listed above or to the World Health Organization, Distribution and Sales Service, 1211 Geneva 27, Switzerland. Orders from countries where sales agents have not yet been appointed may also be sent to the Geneva address, but must be paid for in pounds sterling, US dollars, or Swiss francs. Unesco book coupons may also be used. Prices are subject to change without notice.

Price: Sw. fr. 6.- 53 **ISBN 92 4 120780 9**